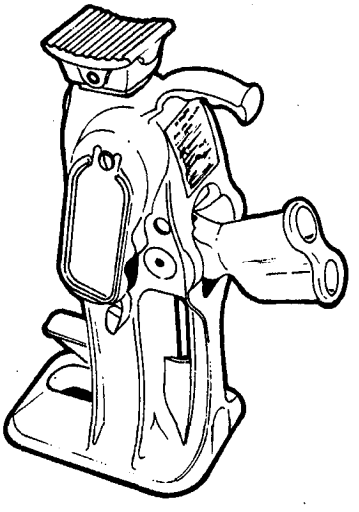
Chapter 20 JACKS

HOW TO CHOOSE AND USE THEM

The “Types and Uses” section provides you with a list of some of the types of jacks. These pages should help you select the right jack to do the job.

The “Using” section tells you how to use the jack to perform the desired function. The “Care” procedures tell you how to care for the items.



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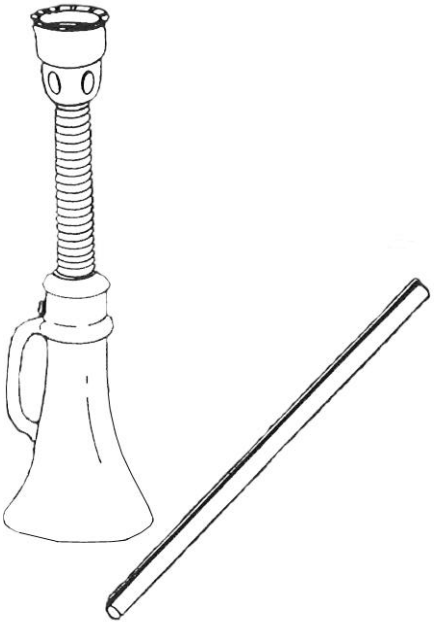
TYPES AND USES

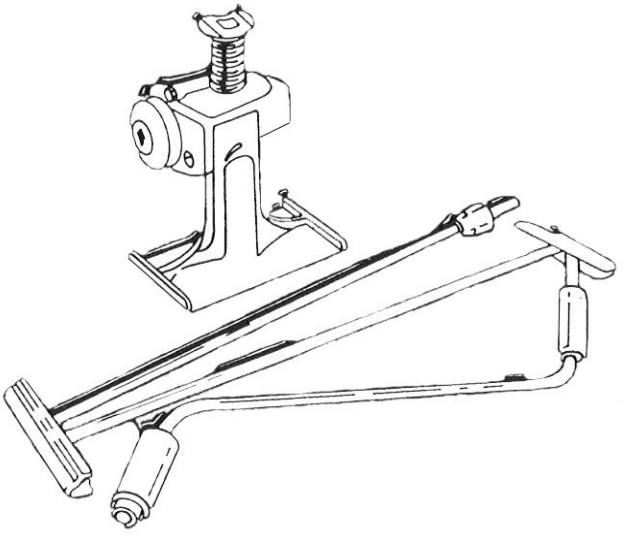
Jacks are used to raise or lower work and heavy loads short distances. Some jacks are used for pushing and pulling operations. Others are used for spreading and clamping operations.

SCREW JACKS

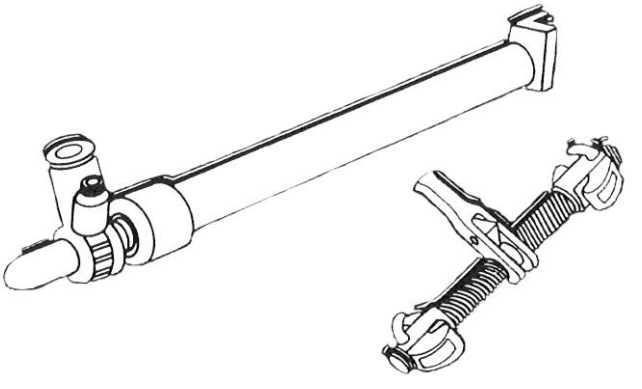
Vertical screw jacks come in several capacities and different lowered and raised heights. The screw moves up or down, depending on the direction the handle is turned. These jacks are used for many different purposes. They can be used to lift vehicles. They can also be used to raise heavy crates, small buildings, or other items too heavy to be raised by prying with wrecking bars.



The vertical bell base screw jack is operated by hand using a steel bar handle which is inserted in the holes of the top housing or head.



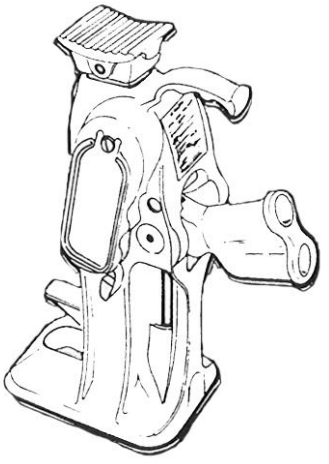
The vertical screw jack with collapsible handle is operated by hand using the collapsible handle which is inserted in a socket.



Another type of screw jack is called an outrigger jack. It is equipped with end fittings which permit pulling parts together or pushing them apart.

TYPES AND USES - Continued

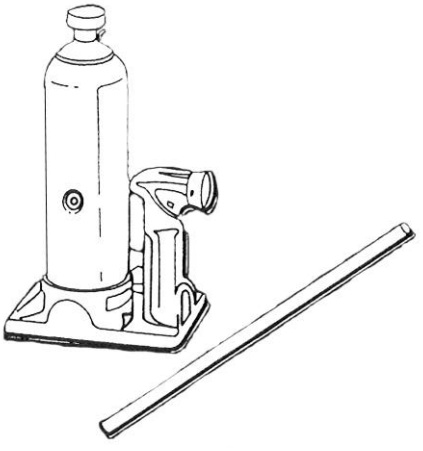
RATCHET LEVER JACKS



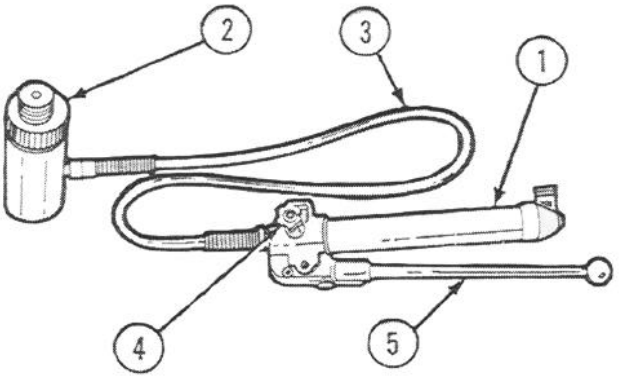
A vertical ratchet lever jack has a rack bar that is raised or lowered through a ratchet lever. Some are equipped with a double socket, one for lowering, one for raising. Others have one socket and have an automatic lowering feature.

An outrigger ratchet jack is ratchet operated and has an extra reverse ratchet handle and a base plate.

HYDRAULIC JACKS



A hydraulic jack operates through pressure applied to one side of a hydraulic cylinder which moves the jack head. These jacks are automatically lowered by releasing the pressure. Vertical hydraulic jacks come in a variety of types, in capacities from 3 to 100 tons, having different extended heights.



A push-pull hydraulic jack consists of a pump (1) and ram (2) connected by a hydraulic or oil hose (3). These jacks are rated at 3, 7, 20, 30, and 100-ton capacities and have many different applications.

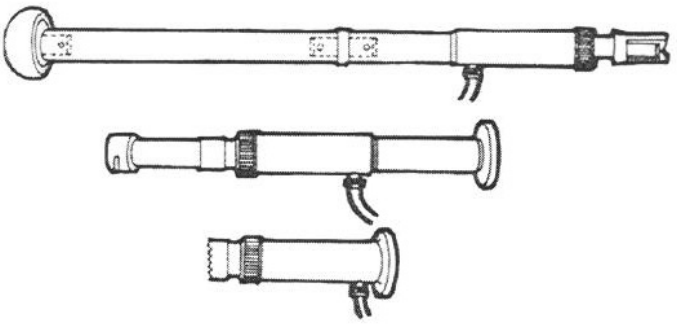
The push-pull hydraulic jacks are furnished with an assortment of attachments that enable you to perform countless pushing, pulling, lifting, pressing, bending, spreading, and clamping operations. The pump is hand operated. Simply turn the control valve (4) on the side of the pump clockwise, stroke the hand lever (5) up and down and the ram will extend. The flexible hydraulic or oil hose allows you to operate the ram from a safe distance in any desired position.

The ram retracts automatically by turning the control valve counterclockwise. The attachments can be threaded to the end of the plunger, to the ram body, or into the ram base.

TYPES AND USES - Continued

Illustrated below are some standard combinations of the push-pull hydraulic jack attachments for various operations.

1. Jack pushing combinations
2. Jack pulling combinations
3. Jack spreading combinations
4. Jack clamping combinations



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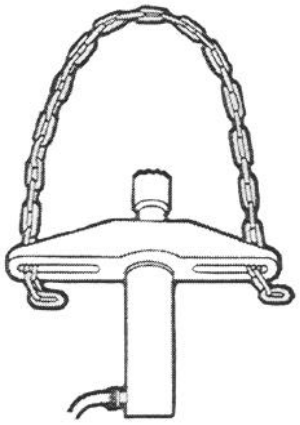

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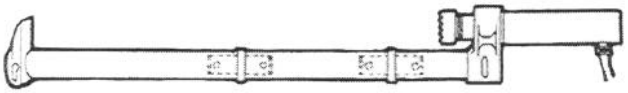

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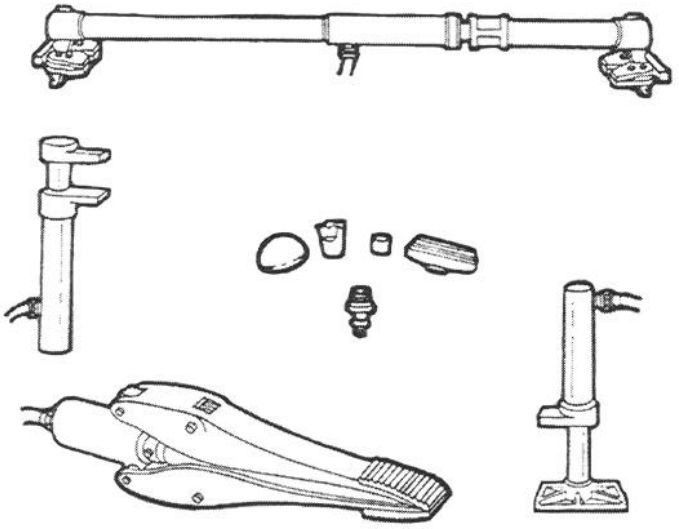

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SAFETY

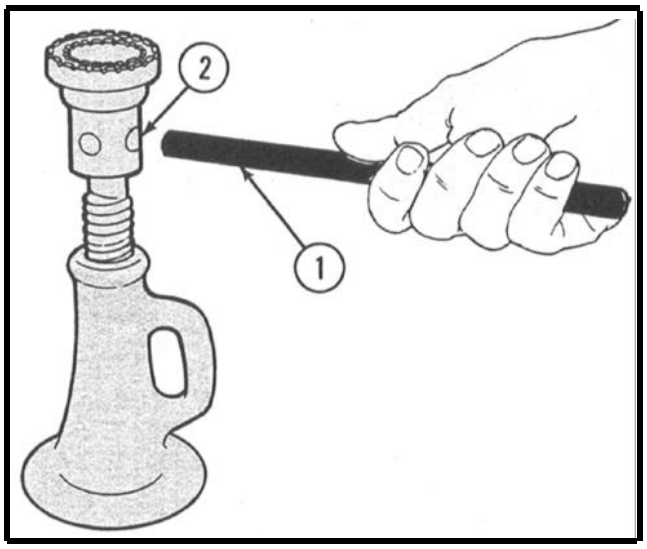
1. Keep fingers away from all moving parts.

WARNING

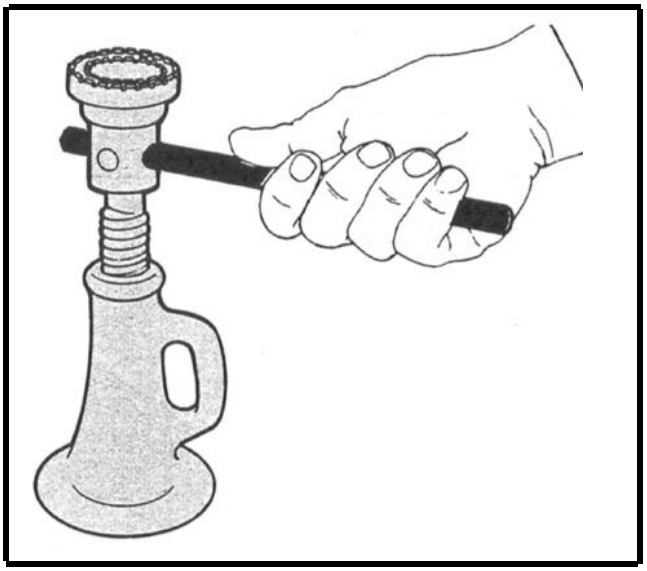
NEVER GET UNDER A LOAD THAT IS ONLY SUPPORTED BY A JACK. ANY JACK IS SUBJECT TO FAILURE AND PERSONAL INJURY COULD RESULT.

2. When jacking up vehicles, make certain no one is under the vehicle to be raised. Set the hand brake firmly and block the front wheels if a rear wheel is being changed. Block the rear wheels if a front wheel is being changed. Place blocking or other supports under the vehicle when it is raised to the desired height to prevent it from dropping if the jack fails.
3. Make certain that hydraulic jacks are filled with oil and that there are no visible oil leaks before using.
4. Any new or repaired jack should be carefully inspected by the operator prior to use.
5. Overloading can be hazardous to the jack, the operating personnel, and the load in event of jack failure.
6. Be aware of the capabilities of the jack, especially its load capacity.

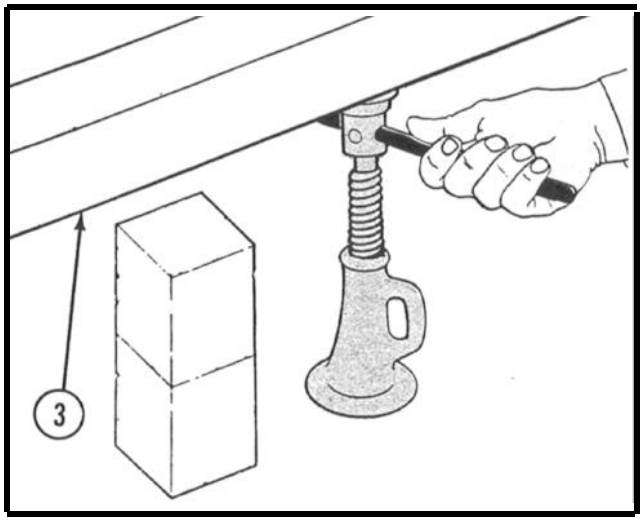
USING A BELL BASE SCREW JACK



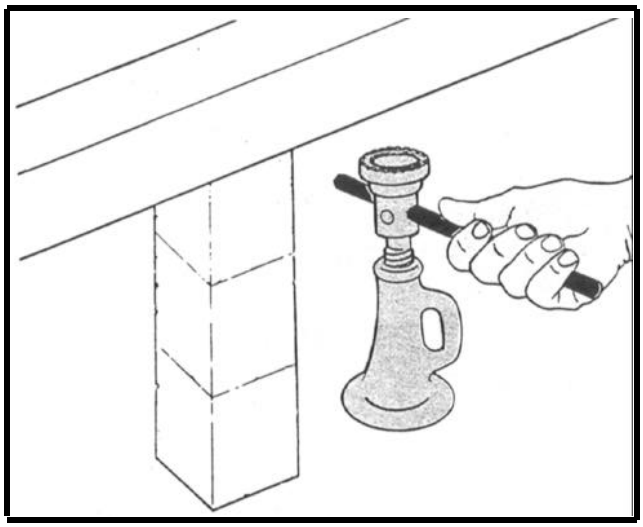
1 Insert the handle or bar (1) in the hole in the top housing or head (2).



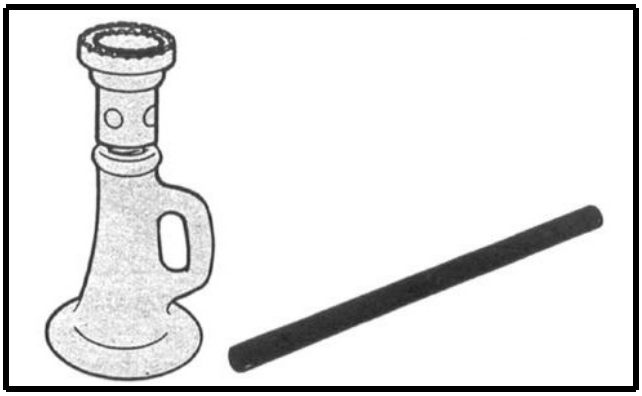
2 Turn or push the handle to the right to raise the jack, to the left to lower the jack.



3 The jack will raise the load (3) with every degree turned on the handle.

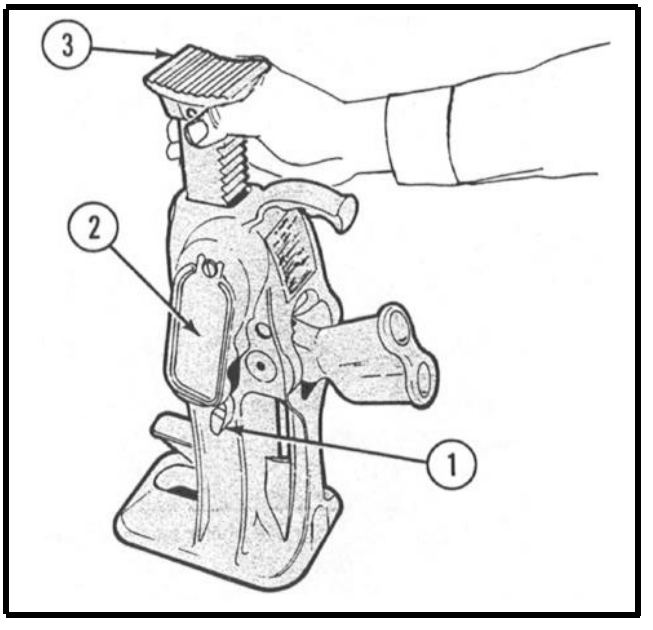


4 Block the load to withdraw the jack.

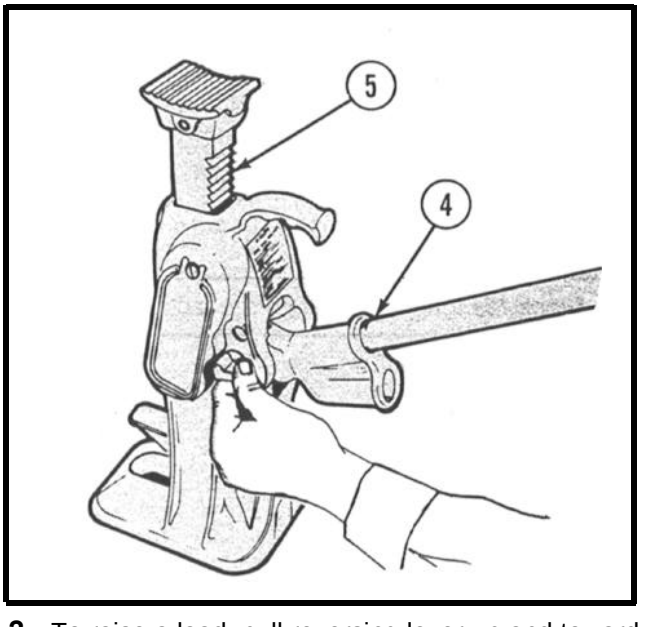


5 Screw the jack all the way down in the lower housing and withdraw the handle or bar for storage upon completion of the job.

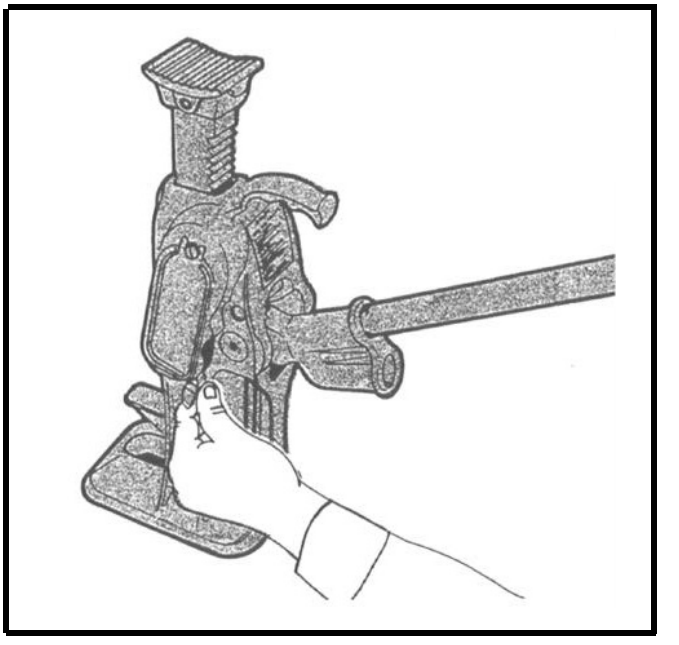
USING A RATCHET LEVER JACK



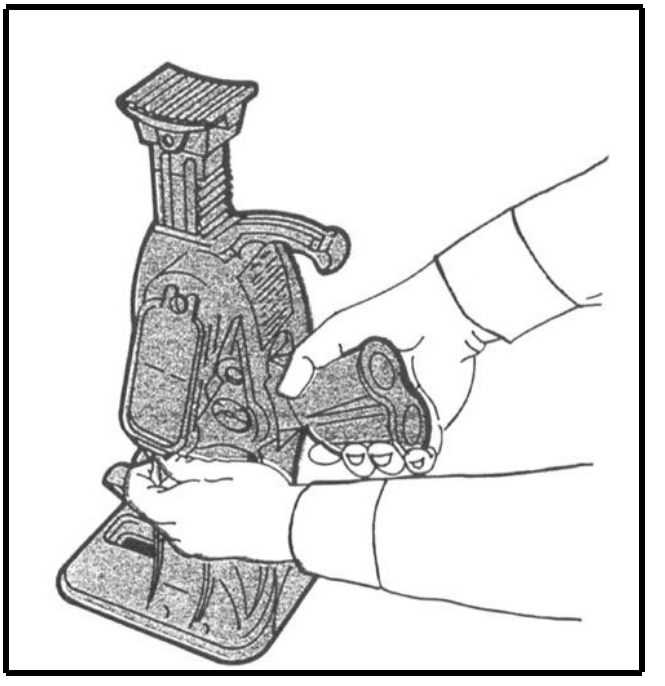
1 The operator should familiarize himself with the jack, its capabilities and its operations. The reversing lever (1) is located below the lifting mechanism cover (2) on the left side of jack when viewed from the lifting lever. When preparing to lift a load, the head (3) can be pulled up by hand to meet the load.



2 To raise a load, pull reversing lever up and toward the operator and operate the lever (4). The jack will raise the load one notch for each lever downstroke. The rack (5) cannot be ratcheted out of the base, as it is designed to stop when raised to its top limit.



3 To lower a load, push reversing lever to straight-down position and operate the lever. The jack will lower the load one notch for each upstroke of the lever.



4 When the head of the five-ton jack is not supporting a load, the rack can be allowed to fall free by pressing the reversing lever all the way to the rear and slightly lifting up on the lifting lever. The rack will not fall free if even a slight load is still on the head.

CARE OF JACKS

1. Coat all surfaces with a thin film of light oil when not in use.
2. For long periods of storage, the jacks should be covered with a rust-preventive compound and stored in a dry place.
3. Periodically check hydraulic fluid level in push-pull hydraulic jacks. Stand the pump on end before taking out the fill plug, then fill with oil. Make sure the ram is in the retracted position when checking level of oil and when filling.
4. Ratchet lever jacks should be well greased. 4 thin coat applied with hand *or* brush is sufficient for all movable parts except the bushings. The bushings should be filled with grease in the small hole-provided for greasing purposes. Keep rack sides and front greased, but do not grease the rack teeth.